Minnesota Transportation Museum

MINNEGAZETTE

November/December 1984

About the Cover

Destination Minneapolis? Portland Tri-Met system light rail vehicle No. 106 was displayed aboard a flat car near 4th St. and Chicago Av. in downtown Minneapolis on Sept. 15 and 16. The display gave Twin Citians an opportunity to walk through a modern streetcar and envision its possible use here. The car was enroute from its final assembly in Barre, Vermont to service in Portland, Oregon. Photo by **Dave Norman.**

Annual Meeting and Election of Officers for 1985 on Nov. 27

Notice is hereby given, in accordance with the Bylaws of the Minnesota Transportation Museum, that the annual meeting of the MTM is at 7:30 p.m. on Tuesday, November 27 at the Burlington Northern auditorium at 176 E. 5th St. in downtown St. Paul.

An entertainment program will follow the meeting. All members are urged to attend this important meeting. See you at the BN auditorium on November 27!

A Look At LRT

As light rail transit continues to make news in the Twin Cities and with important decisions on LRT coming up soon, it's time to take a close look at the concept of LRT and its battle to gain local acceptance.

This issue of the **Minnegazette** looks at the LRT concept on several fronts.

- Development of LRT
- Comparison with alternatives
- Review of LRT studies
- Selection of LRT corridors
- A look at an LRV

All of these issues will be reviewed closely in the months ahead by public officials and agencies in an attempt to make the Twin Cities area a better place to live, work and, hopefully, to commute.

Portland LRV No. 103, with "Portland City Center" on the destination sign, at the United States Department of Transportation test track in Pueblo, Colorado in May 1984. Photo by Ken Fletcher.

Calendar of Events

Nov. 17/18: Model Railroad Show, Har Mar Mall.
Nov. 23-25: Preview Showing, Twin City Model Railroad Club, Bandana Square.
Nov. 27: Annual meeting and election of officers for 1985, Burlington Northern auditorium, St. Paul.
Dec. 1: Great American Train Show, St. Paul Civic Center.
Dec. 14-23: Holiday Season Operations, Twin City Model Railroad Club, Bandana Square.
Dec. 15/16: Model Railroad Show, Twin City Model Railroad Club, Bandana Square.

MINNEGAZETTE

Published bi-monthly for members in good standing of the Minnesota Transportation Museum, Inc.

Articles and photos of museum interest are always welcome and will be returned upon request.

Please address all communications to the editor,

Fred Rhodes, Minnegazette
10409 Nicollet Circle
Bloomington, MN 55420

1985 MTM Board Slate Announced

The 1984 Nominating Committee recommends the following slate of candidates for museum office in 1985. For the first time in many years, all candidates are incumbents from the previous year's board. The slate will be offered to the membership at the Annual Meeting on November 27, 1984. Members may nominate any other candidates for museum office at this meeting, and museum officers will be elected by secret ballot. The Committee believes that its slate represents the best qualified people to serve.

President	**Gayle Bromander***
Executive Vice President	**Eugene Corbey***
Vice President, Railroad	**Bernard Braun***
Vice President, Traction	**Donald Westley***
Vice President, Public Relations	**Jeffrey Haviland***
Secretary	**Patricia Campion***
Treasurer	**Russell Olson***

* Incumbent

After the election of the new board, the members will vote for three members to represent the 1985 Nominating Committee.

Respectfully submitted,
1984 Nominating Committee
Ken Snyder
Bob Renz
Frank Sandberg, Chairman

1985 MTM Dues Renewal Time

Enclosed with this issue of the **Minnegazette** is your 1985 membership dues renewal notice. Simply fill out the bottom portion of the yellow sheet and send it, with your check made out to the Minnesota Transportation Museum, to **Raymond R. Bensen Sr.,** Membership Secretary, 4832 York Av. S., Minneapolis, MN 55410.

Remember, if you pay your 1985 dues before January 1, you can deduct the dues payment from your 1984 income taxes. Send in your dues today and avoid the rush.

Raymond R. Bensen Sr.
Membership Secretary

The 328 steam train left a distinct trail of smoke and steam as it climbed out of Stillwater on Oct. 14. Passenger equipment consisted of Northern Pacific Triple Combine car 1102, a primered Great Northern coach, repainted GN Empire Builder coach 1213 and Rock Island commuter car 2604. Photo by Bill Graham.

MTM Scores with Northfield Football Special

Saturday morning, September 29, dawned cold but sunny at the Soo Line's Humboldt Yard near 46th and Humboldt Avs. N. in Minneapolis. Waiting for the passengers was MTM's Football Special consisting of Northern Pacific steam engine 328 and tender, a 4,300-gallon water tank car, NP Triple Combine car 1102, Great Northern passenger coaches 1096, 1097 and 1213, Rock Island commuter car 2604, GN dining car 1154, GN sleeper car 1267 and GN business car A-11.

The temperature was only in the high 30s and there was frost on the windows as several MTM crew members scurried around performing last minute tasks. But the sun rose warm and bright and warmed the passengers who boarded our train which does not yet have steam heat.

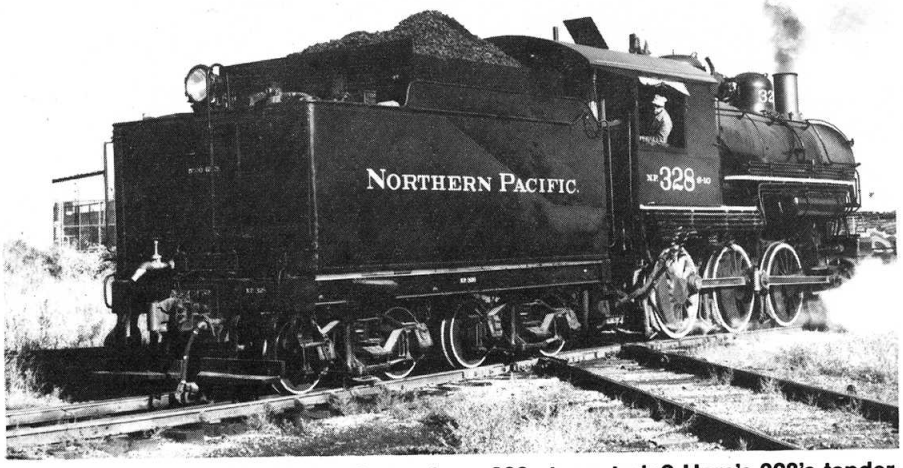
The Soo Line inserted road switch engine 4452 into our consist and, after a short delay to finish watering the tender, the train departed for Northfield, Minn. via the former Minneapolis, Northfield and Southern mainline. It wasn't long before the warm spirit of the passengers on the nearly sold-out train had warmed up the coaches. We were blessed with near-perfect fall football weather.

Besides providing the public with a nice fun train ride, the purpose of this trip was to convey a good number of Carleton College football fans to the game in Northfield between their college and Hamline University of St. Paul.

Two cars made their debut in this MTM train. One was **Great Northern sleeper 1267,** the **Skagit River,** owned by MTM members **Dave Rushenberg** and **Bob Clark.** It consists of three sleeping sections; roomettes, double bedrooms and pullman berths. Although still being restored, it is ready for our type of excursion service and a number of first class passengers enjoyed the car.

The other newcomer was **Great Northern business car A-11.** Originally built as an observation car before 1920, it later became a business car and finished service on the BN as a classroom car, which MTM purchased as BN car B-7. Our members have worked hard this past year to turn the car into parlor car service on our excursion trains until such time that it can be restored to a business car again. From its beautiful Omaha orange and green exterior to its carpeted floor, easy chairs, and flowers in the interior, one had to admit it added a handsome tailend to our train.

A special thanks goes to **Betsy Snyder** for the beautiful flowers in cars A-11 and the diner. Yes, we did serve dinner in the diner again, thanks to **Dirk Lenthe,** the owner of the **Lake Michigan** and MTM members **Dan** and **Jane Knutson** from Professional Catering Service.



Who says we don't get tender shots of our 328 steam train? Here's 328's tender, fully-loaded with coal, at the Minnesota Transfer Railway roundhouse in St. Paul on Sept. 28. Student engineer Orville Richter was putting the train together in preparation for the Carleton College football special to Northfield the next day. Photo by Bob Ball.

The Carleton College football special MTM 328 steam train to Northfield smoked up an otherwise clear sky as it neared Lakeville on Minneapolis, Northfield and Southern (now Soo Line) trackage on September 29. The little 10-wheeler had Soo Line engine 4452 in tow (who was pulling whom?) along with several MTM passenger coaches. Photo by Judy Sandberg.

Regular riders of Rock Island commuter car 2604 certainly noticed a big change in the appearance (and comfort) of this car. Although we have run this car many times before, this is the first time it has run for MTM with *glass* in the windows! With cold weather at the start and end of the day, windows were a necessity. A big thank you goes to member **Orville Richter** who single-handedly installed all 50 windows in less than two weeks which permitted use of this 100-passenger coach on this day.

Richter was not the only person to do much more than called for to get the train ready. Many people listed later in this article put in long hours getting the equipment ready for this trip. In some cases, members worked until the early morning hours to complete necessary tasks. Hopefully, those members will be recognized for those work sessions in future **Minnegazettes.**

The trip south through the western and southern suburbs of Minneapolis was a beautiful experience for all as the fall colors were appearing and the bright sunshine added to the natural beauty of the area. Old 328 was the lead power southbound with the Soo Line diesel right behind it to provide additional power on the steep grades out of the Minnesota River Valley.

The arrival in Northfield was on time and most of the passengers left the train for either the football game or a walk around historic Northfield. The crew moved the train to the railroad yard to switch the positions of some of the cars and to place the power on the front end of the northbound train. There is no wye or turntable in Northfield so the Soo Line diesel had to lead the train back to Minneapolis followed by 328 running backwards.

Departure from Northfield was at 5 p.m. with a quick trip back to the Humboldt Yard. Engine 328 provided help in climbing out of the valleys and actually did much of the work the last 20 miles into Humboldt Yard. The passengers enjoyed the setting sun and dinner either in the dining car or a box lunch in their coach. Arrival at Humboldt was on time and a happy passenger load left our train after a very successful trip.

We wish to thank the Soo Line for this opportunity to operate on their line and a special thanks to **D. H. Nelson,** division superintendent, Minneapolis, and all of the men and women of his division who helped us. The Soo Line crew included Trainmaster **Ken Murphy,** Conductor and MTM member **Casey Bensen,** Engineer **Willard Swenson,** Fireman **Jerry Firschmon,** Headend Brakeman **Mike Smith** and Rear Brakeman **Andy Anderson.** Our thanks to them for their invaluable assistance in operating the train.

We also wish to give thanks to those MTMers who participated in crew duties on the train trip or on the ferry move to Humboldt Yard the day before: **Bob Ball, Ron Beck, Jim Bertrand, Bernie Braun, Peter Brescancini, Bill Bruce, Mark Bruce, Scott Bruce, Elizabeth Burth, Pat Campion, Bob & Joan Clark, Bill Cordes, Fred Daleska, Tom Dethmers, Bruce Furu, Ward & Wendell Gilkerson, Dan & Jane Hansen, Mike Hansen, Phil Hanson, Janet & Jeff Haviland, Scott Heiderich, Mark & Dorothy Hull, Kathy, Pam, Richard & Tony Jenkins.**

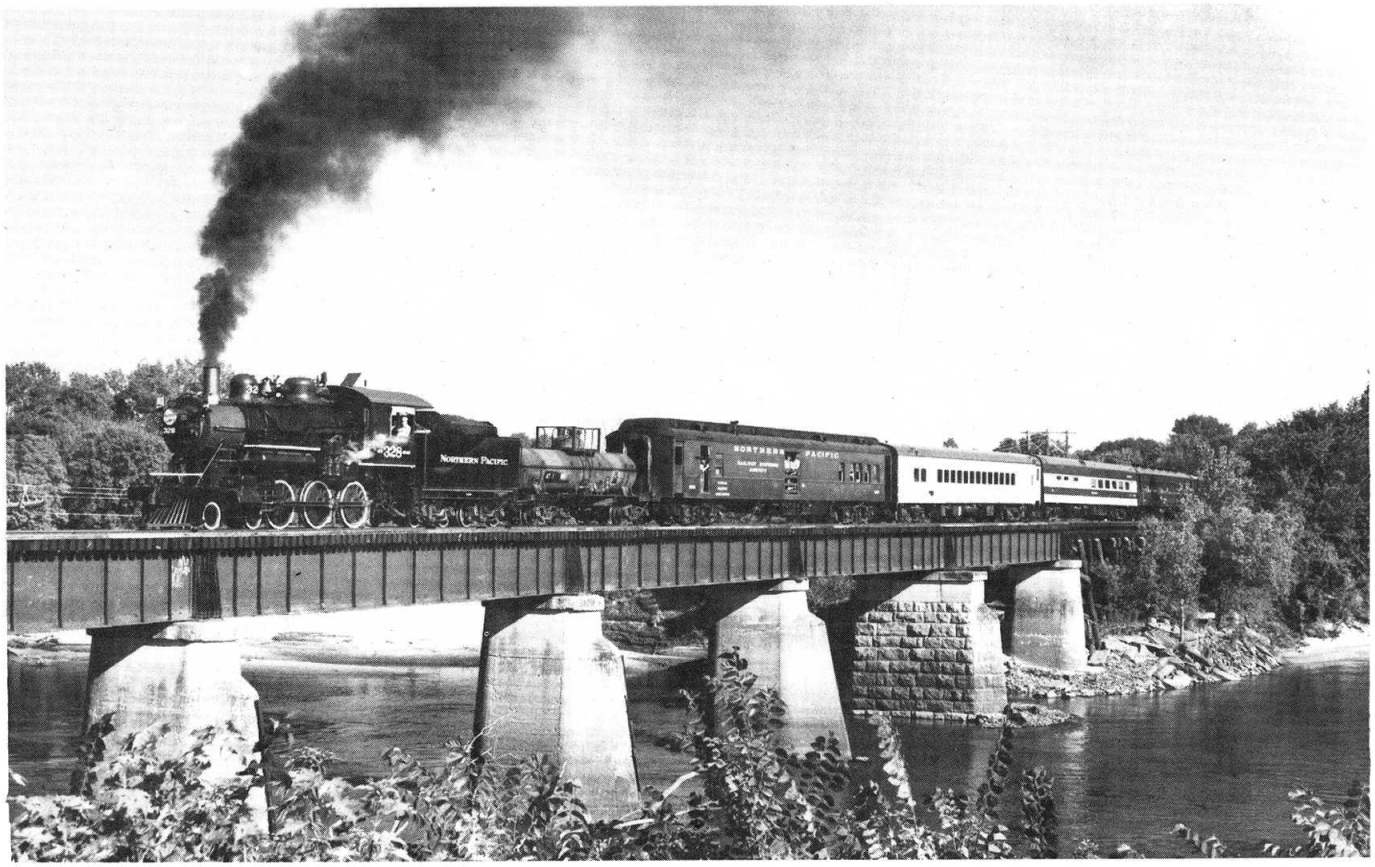
MTM 328 steam engine and Soo Line engine 4452 rounded a curve as it approached Northfield on September 29 with its load of football fans (and railfans). Photo by Judy Sandberg.

More thanks to **Steve Johnson, Richard Kasseth, Greg & Kathy Koon, Dennis Larson, John Larson, Hudson Leighton, Loren Martin, Marv Nauman, Lynn Nelson, Tom Neuhaus, Ray Norton, Kathy Norton, Mike Reardon, Orville Richter, Dave, Dee & Lee Rushenberg, Don Schalis, Terry Spangler, Lee Tuskey, Doris Voligny, Clark Webster, Ken Wingard, John Winter** and **Jim Woodward.**

Lastly, recognition should be especially extended to Railroad Vice President, **Bernie Braun,** Public Relations Vice President **Jeff Haviland** and **Lee Tuskey** for the immense amount of coordination and time they put in with the Soo Line and the Carleton Alumni group in setting up the trip.

Scott Heiderich
Museum Reporter

The 328 steam train pulled a long string of passenger equipment, mostly ex-Great Northern cars, along Soo Line (ex-Minneapolis, Northfield & Southern) trackage near Cedar Lake Rd. in St. Louis Park on Sept. 29. The Carleton College football special was enroute to Northfield, Minn. Photo by Aaron Isaacs.



The 328 steam train crossed the Minnesota River at Carver on Aug. 19 as it was returning from the Renaissance Festival in Shakopee. Photo by Bob Ball.

CHSL Passes 600,000 Mark During 14th Season

Our 14th operating season successfully concluded on September 16 with 60 charters and 1,580 revenue trips, giving a total of **39,751** passengers carried this year and a 14 year total of **604,155** passengers carried since operations began in August 1970. Monthly passenger counts were about average when compared with previous seasons, with exception of the abbreviated end-of-season operations to allow for carbarn construction.

The new construction has begun as planned. Metro Metals is currently installing the underground piping for the storm drains and will soon have completed pouring footings for the new barn.

Our member work crews have completed moving the rails beside the maintenance barn and back to the supply shed. These adjustments are necessary to allow for adequate clearance through the new barn entrances. The overhead wire and and controls have been moved or relocated. Weather permitting, the new ready barn will be finished about November 1. This should allow time to move 1893 Duluth single-truck streetcar No. 78 to the site before winter sets in.

The City of Minneapolis also is performing some restoration work on the retaining wall on the west side of our tracks in the carbarn area. The area really should look neat next spring when it comes time to pull the cars out of the barn for the new season.

Members of the MTM Saturday morning Lake Harriet work crew moved the mainline track away from the carbarn wall an extra 9 inches before construction of the third carbarn began over this track in September. Workers dug out the edges of the ties, then used track jacks against the carbarn foundation to slide the track sideways. This will allow more room for our members to walk around the car inside the new carbarn. Foreman George Isaacs, foreground, checked the progress. Photo by John Prestholdt.

Duluth Street Railway streetcar 265 loaded passengers at Lake Harriet Station at 42nd St. and Queen Av. S. in southwest Minneapolis this summer. Car 265 and TCRT car 1300 were rotated on the line on a two-week basis this summer. On holiday Sundays, both cars were in service. Photo by Aaron Isaacs.

The Como-Harriet Streetcar Line is in good shape financially, as reflected in the Treasurer's records, but will be operating much closer to the dollar when we complete payment for the new carbarn. Included with your last **Minnegazette** was a contribution form to raise revenue for restoration of 78. Without a successful solicitation for funds, restoration activities will have to wait until money is available. If you can spare a few dollars on a worthy cause, they would certainly be put to good use.

Our drive to raise $9,000 to help pay for the new barn is well under way but we also need lots more contributions to get us over the top. If you have not already made your donation to the new barn, please send it in today to MTM, Box 1300, Hopkins, MN 55343 and make your checks payable to **MTM Carbarn Fund.** Remember, all contributions are *tax-deductible* on state and federal taxes. Thanks for your support.

This operating season was a smooth one, thanks to the cooperation and enthusiasm of our participating membership. Outstanding individual efforts on the part of people that took responsibility for training, scheduling, maintenance, overhead, gardening, groundskeeping, and track maintenance resulted in another fine summer of operations. Thank you all.

Don Westley
Vice President, Traction

DSR car 265, bearing its Duluth Woodland (Av.) destination, approached the William Berry bridge on the northbound leg of its trip to Lake Calhoun. Photo by Aaron Isaacs.

Dan Karow of the Hartford Steam Boiler Inspection & Insurance Co. inspected MTM's 328 steam engine on Sept. 13 and found it to be in good operating condition. Photo by Bob Ball.

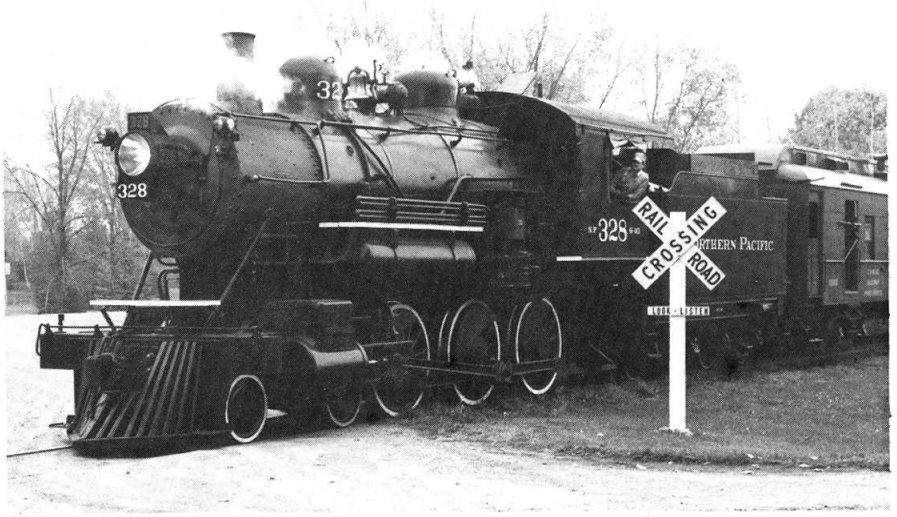
Duluth car 265 prepared to load another large group of passengers at Lake Harriet Station. The long flower garden in the foreground is maintained by MTM members. Photo by Aaron Isaacs.

You Buy It— You Own It!

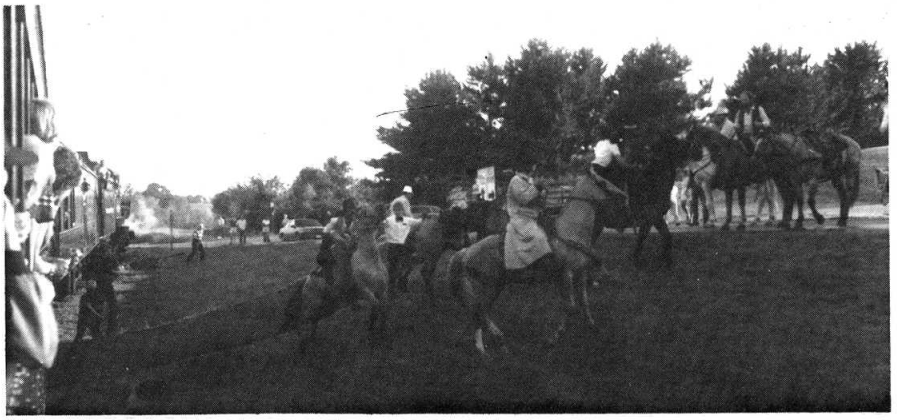
The MTM Board of Directors would like to remind all members about its policy of Acquisitions and Dispositions. Last year an Acquisitions/Dispositions form was included with your **Minnegazette** that outlined the procedures on how the museum purchases a piece of equipment.

The form contained such questions as: present owner, location of equipment, condition, availability and probable use. The museum, at its descretion, could send someone to inspect the equipment. The board then would evaluate the equipment, consider its restoration probabilities, cost, storage and other factors and make a decision.

Under no circumstances will the board purchase a piece of equipment from a member just because the member wanted to "save" it from the scrap pile or similar situations. Buy at your own risk. Remember, if you buy it—you own it!

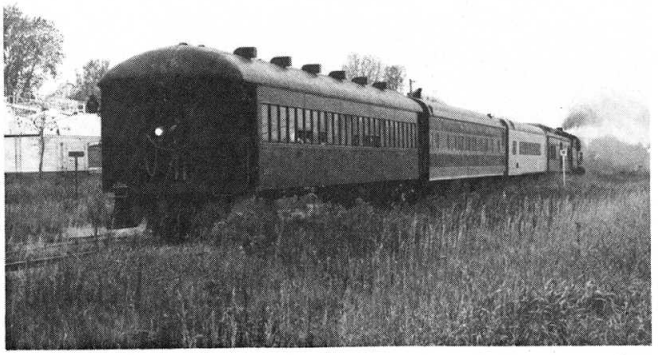


The 328 steam train crossed N. 88th St. in Grant Township (Stillwater) during MTM's second weekend of passenger operations on the museum's new 6-mile branch line railroad on Oct. 14. MTM's first operations on the line took place July 14/15 during Lumberjack Days. Photo by Bill Graham.



MTM Stationmasters Jeff and Janet Haviland were "kidnapped" on horseback from the museum's 328 steam train during "Lumberjack Days" in Stillwater on July 14. Photo by Elizabeth Burth.

Marv Nauman, left, Jim Woodward and Janet Haviland boarded passengers on the 328 steam train in Stillwater on Oct. 14. This run, as well as several others, was sold out.



The 328 steam train at Summit Siding near Stillwater on Oct. 14. Rock Island commuter car 2604 brought up the rear. Note that the car now has windows! Photos by Bill Graham.

Light Rail Transit—Here at Last?

Light rail transit--a modern version of the old electric streetcar lines--could be close at hand in the Twin Cities after several years of discussion and endless feasibility studies. A light rail vehicle made its first appearance in the Twin Cities in September to reacquaint residents with rail transit.

What is a light rail vehicle?

Like its ancestors of 100 years ago, a light rail vehicle runs on steel rails and collects electric power from an overhead wire. The similarity between a light rail vehicle and the old-fashioned streetcar ends there. The light rail vehicle uses modern material and design, and provides fast, clean, quiet and comfortable service to the public. They have grown to nearly 90 feet in length in an articulated design and can carry up to 200 passengers or, in trains of two to four cars, up to 800 passengers with a single motorman.

What is light rail transit?

Again, similarities to the old yellow TCRT streetcar are scarce. In today's world, LRT best serves high-volume transit routes. Buses are used as feeders to the LRT line, and provide crosstown and circulation service in the neighborhoods. This reduces bus congestion in downtown areas and centers of activity. It makes transit more attractive to those who drive and less expensive for the community to provide.

LRT can operate in mixed traffic, but normally it uses reserved transit lanes. This reduces street congestion, speeds transit movements, and attracts riders. The track is simple and relatively inexpensive to build, since it needs no special bridges or tunnels. It can use boulevard medians, bus lanes, railroad rights-of-way, alleys or downtown malls.

Most important, LRT can handle sudden ridership surges that cause bus systems to break down. It keeps running when winter blizzards and oil shortages force cars and buses off the road.

Light rail systems are less expensive and easier to build than "heavy rail" systems such as the Bay Area Rapid Transit (BART) system in San Francisco/Oakland and the Metro subway system in Washington D.C.

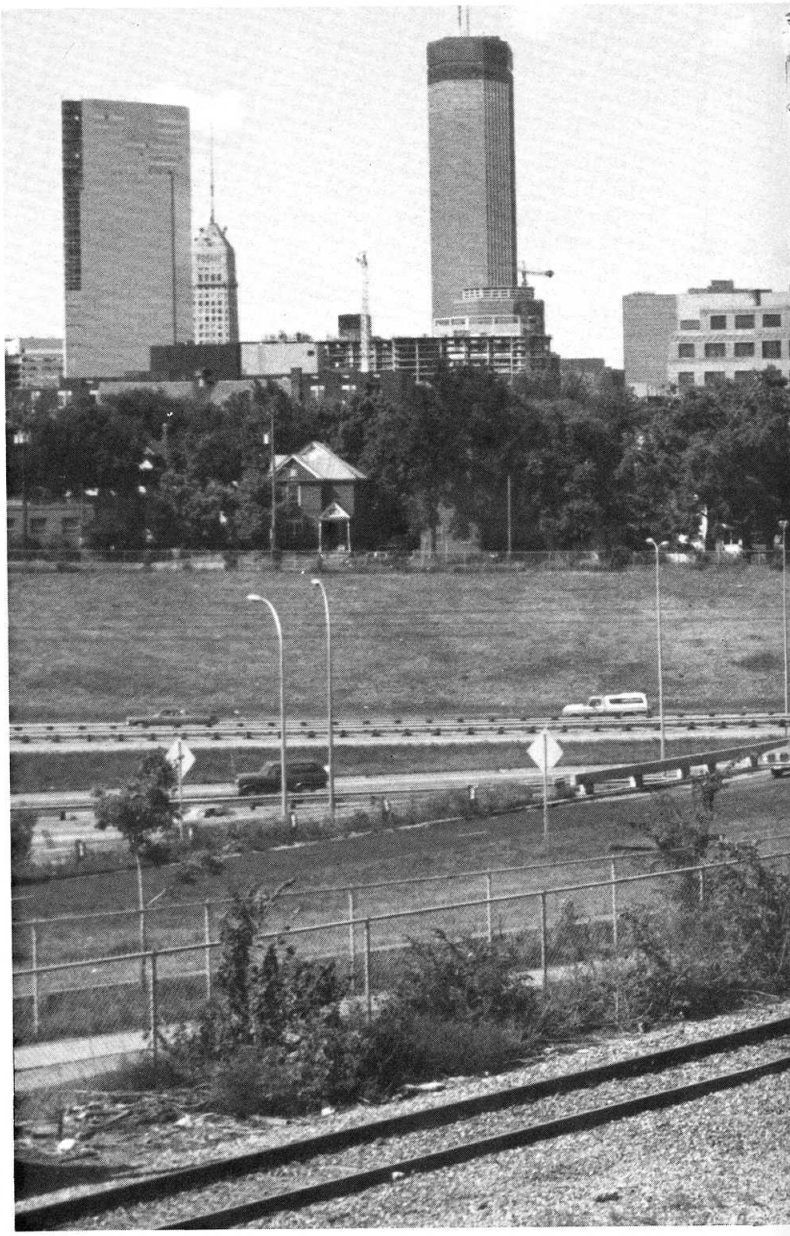
Who uses LRT?

Around the world, over 100 cities have light rail service. In North America, 16 cities have it or are building it including San Diego, San Francisco, San Jose, Sacramento, Portland, Calgary, Edmonton, Mexico City, New Orleans, Cleveland, Buffalo, Toronto, Pittsburgh, Philadelphia, Newark and Boston. Each LRT is adapted to local conditions and no two are exactly alike.

What are the Twin Cities doing?

Our region is on the verge of major transit decisions. Three travel corridors; Southwest, University Av. and Hiawatha Av., are being considered for LRT. Each appears to offer sufficient ridership, and each has a right-of-way already available which will help minimize disruption to the community. The Hennepin County Regional Railroad Authority has purchased the Chicago & North Western Railroad right-of-way (Southwest corridor) extending from Minneapolis through the west and southwest suburbs to Lake Minnetonka.

Studies now underway will recommend whether LRT should be built in any of the corridors, and how to organize and finance it. In addition to the Hennepin County Regional Railroad Authority, participants include Ramsey County, the Downtown Councils of Minneapolis and St. Paul, The Greater Minneapolis Chamber of



Preview of things to come? An LRV leaving downtown Minneapolis via the Hubert H. Humphrey Metrodome (right, background) on the Hiawatha Av. LRT line bound for MSP International Airport and Bloomington would look much like the scene pictured above if the

Commerce, the cities of Minneapolis, St. Paul, Bloomington, St. Louis Park, Hopkins, and Minnetonka; the Metropolitan Airports and Transit Commissions, the Regional Transit Board, the Metropolitan Council, the University of Minnesota, and the State Departments of Planning and Transportation.

LRT study overcame barriers

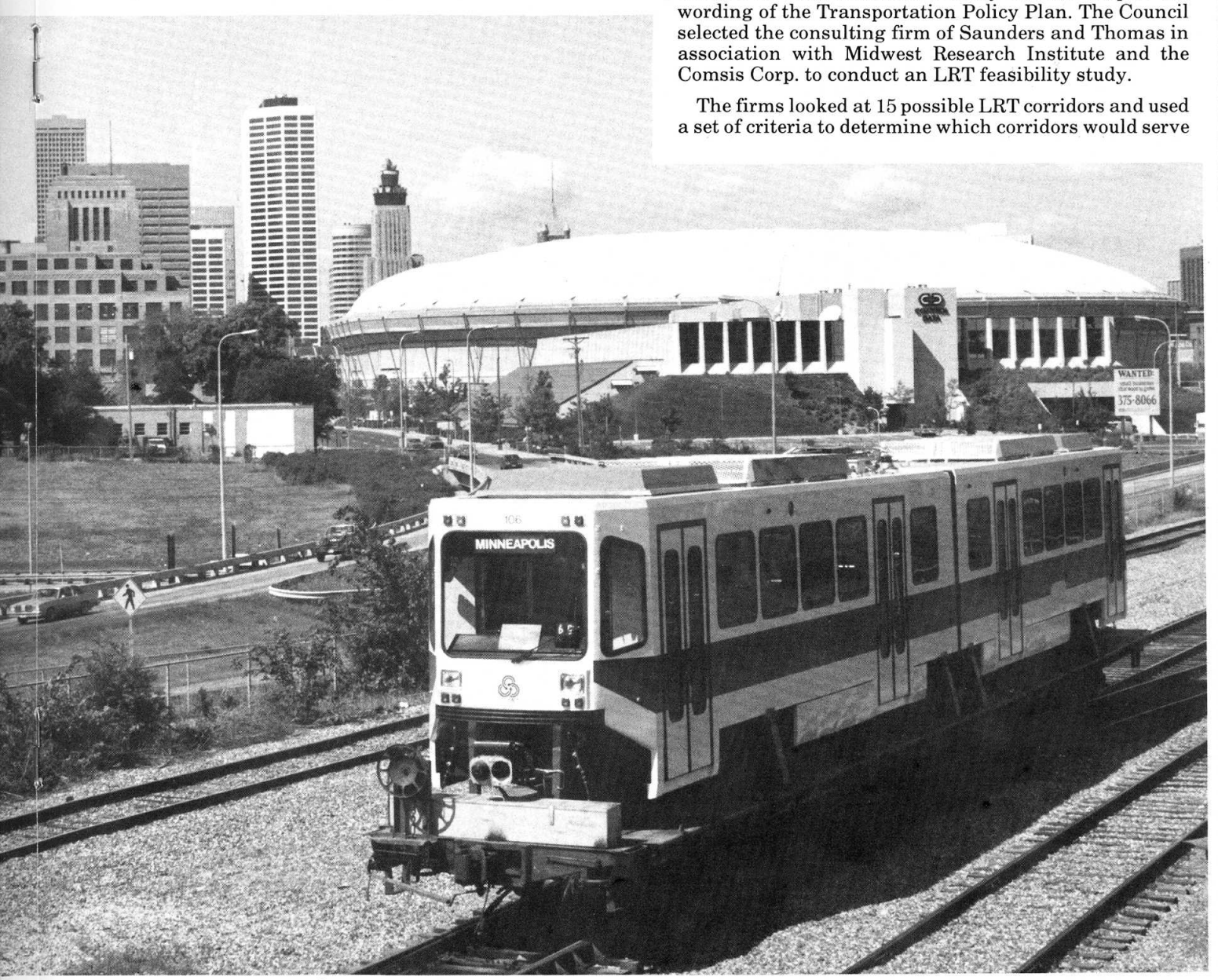
Before the latest LRT study could reach this point, the concept of light rail first had to clear some local hurdles. Under a mandate, the Metropolitan Council must review its Transportation Policy Plan at least once every four years.

In 1976, the Council heard all kinds of transit proposals for the Twin Cities, from LRT and express buses to subways and people movers. New rail transit systems at the time suffered from cost overruns and fell into general disfavor. The Council decided to stick with buses for the forseeable future and adopted a policy that stated:

"No fixed guideway for the exclusive use of transit (buses and automated and semi-automated technologies) is to be provided for regional and subregional service" through the year 1990. That included LRT.

However, as downtown congestion increased, petroleum prices skyrocketed, and new light rail systems in San Diego, Edmonton and Calgary proved to be relatively inexpensive to build and operating successes, the Metro Council in 1980 launched a study of LRT despite the wording of the Transportation Policy Plan. The Council selected the consulting firm of Saunders and Thomas in association with Midwest Research Institute and the Comsis Corp. to conduct an LRT feasibility study.

The firms looked at 15 possible LRT corridors and used a set of criteria to determine which corridors would serve



s decision to build light rail transit lines gets the green light. The e Hiawatha Av. LRT line would use this right-of-way which passes d over Interstate 35W (left, background). The Portland-bound LRV, e with "Minneapolis" on its destination sign, posed for pictures on Milwaukee Road trackage just east of downtown Minneapolis on Sept. 15 as it was being moved to a display site on a siding across the street from the Metrodome. Photo by Ken Fletcher.

LRT best. Some aspects looked at included use of abandoned railroad rights-of-way, highway medians, extra wide streets, and other routes where LRT would not have to compete with street traffic. The 15 routes branched out in all directions from both downtowns.

6 routes studied

Due to the practicality and time constraints, the firms narrowed the 15 possible corridors down to five for detailed study. The five corridors studied were:

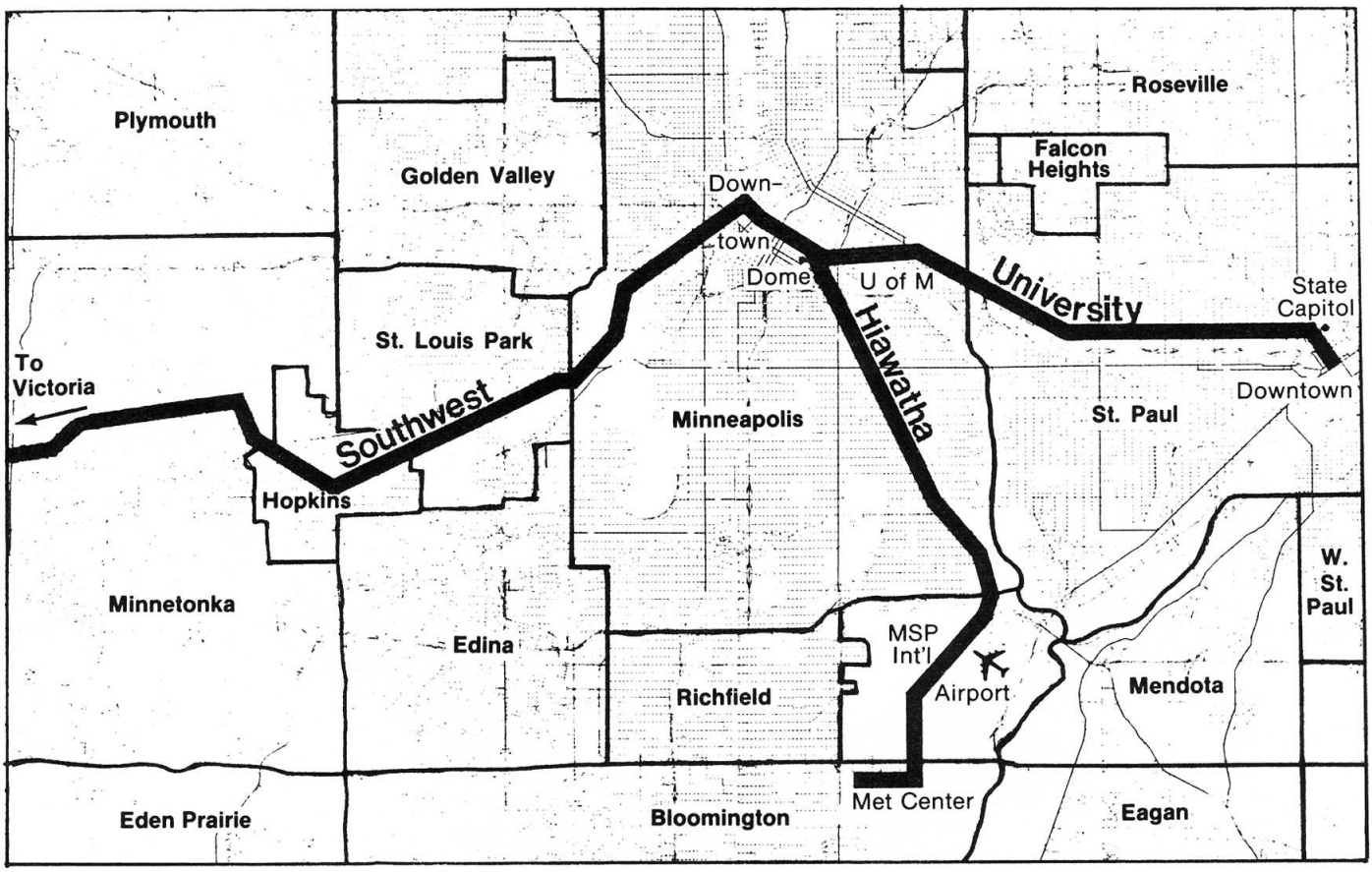
- **Minneapolis - Southwest,** 14.1 miles, from the Metrodome to Highway 101 in Minnetonka, using the C&NW railroad right-of-way (this right-of-way later was purchased by the Hennepin County Regional Railroad Authority).
- **Minneapolis - St. Paul,** 10 miles, downtown-to-downtown using University Av.
- **Minneapolis - West,** 12.5 miles, from the Metrodome to Wayzata using Highway 12 (Wayzata Blvd.). Although the affected communities preferred LRT, this corridor recently was designated to become the new 6-lane Interstate 394 with reverse HOV (high-occupancy vehicle) lanes for rush hour traffic.
- **St. Paul - Northeast,** 8.8 miles, from Kellogg and Cedar St. in downtown St. Paul to White Bear Av. and County Road D in Maplewood, mainly on the BN railroad right-of-way.
- **Minneapolis - Northwest,** 8.3 miles, from the Metrodome to Bass Lake Road and Brooklyn Blvd. in Brooklyn Center, mainly along the BN right-of-way and highways 52, 100 and 152.

A sixth corridor was studied independently by the Bather, Ringrose and Wolsfeld consulting firm.

- **Hiawatha Avenue,** 7.6 miles, from downtown Minneapolis to MSP International Airport, mainly along Hiawatha Av.

In March 1981, Saunders and Thomas released a final report on the LRT study and concluded that LRT was feasible on all corridors, particularly on University Av. The Transportation Staff of the Metro Council not only endorsed the feasibility of LRT but recommended that the University Av. line be the first line built.

That sentiment was echoed by Mayors George Latimer of St. Paul and Don Fraser of Minneapolis. In tying their two downtowns together with LRT, the mayors cited in particular the savings of 500,000 gallons of petroleum fuel by the year 2000 on that route alone.



This map shows the three corridors currently under study for light rail transit. The 23-mile Southwest corridor (not shown in its entirety) would use the C&NW railroad right-of-way from downtown Minneapolis through St. Louis Park, Hopkins, Minnetonka, Deephaven, Greenwood, Excelsior and Shorewood to Victoria. The 11-mile Hiawatha corridor would use a strip of land already cleared on the west side of Hiawatha Av. through south Minneapolis and past MSP International Airport to Met Sports Center in Bloomington. The 10-mile University corridor would use Washington Av. in Minneapolis, through the U of M, and University Av. in St. Paul, connecting the two downtowns. All three lines would share the same trackage (probably one-way 5th and 6th Sts.) through downtown Minneapolis.

The report projected a daily ridership figure of 43,600 passengers for the University Av. corridor. The Southwest corridor was next with a projected ridership of 25,400 passengers daily. However, by running the Southwest LRT line out Hennepin Av. to Lake St. and then onto the C&NW instead of using the railroad corridor entirely from downtown Minneapolis, and also running the LRT only as far as Hopkins, the ridership could be as high as 50,000 daily.

Shortly after the LRT study was released, the Metro Council revised its Transportation Policy Plan to allow LRT (and/or other forms of fixed-guideway transit systems) to be considered as a transit alternative before 1990.

Another LRT study

In 1982, a $150,000 grant was awarded to the Metro Council for another study of LRT. The grant was approved for the continued study of two possible routes examined in the previous study: Southwest and University Av. By eliminating three proposed corridors looked at in the previous LRT study, the focus was on the two corridors that projected the greatest ridership.

Meanwhile, the independent study on the Hiawatha Av. corridor continued. The Hiawatha Av. task force group estimated that 58,000 passengers a day would ride the Hiawatha LRT to and from the airport. Last year, agreement was reached on a design for a 4-lane arterial and LRT line along Hiawatha Av. from downtown Minneapolis to the airport. The arterial and the LRT are independent of each other and could be built one before the other. Since then, the LRT corridor has been extended from the airport to the old Met Stadium site in Bloomington, an area that is expected to grow rapidly into a "third downtown."

With the chances of LRT for the Twin Cities growing, it was time to show a light rail vehicle to the public.

LRV in the Twin Cities

A light rail vehicle came to the Twin Cities in September—for display purposes only—to show people how far the technological evolution of the street railway coach had come. Bombardier, Inc., of Montreal, Quebec, Canada, displayed its newest 89-ft articulated light rail vehicle which is headed for Portland, Oregon for use in that city's new 15-mile LRT line from downtown to suburban Gresham, scheduled to begin operation in July 1986.

The gleaming white coach with bright red trim sat aboard a railroad flat car on a Milwaukee Road siding on the northeast corner of 4th St. and Chicago Av., directly across the street from the Hubert H. Humphrey Metrodome on Saturday and Sunday, Sept. 15 and 16. That siding could turn out to be part of both the Hiawatha and University Av. LRT lines which would run on the same track at this point. And the display site could turn out to be the LRT Metrodome station stop.

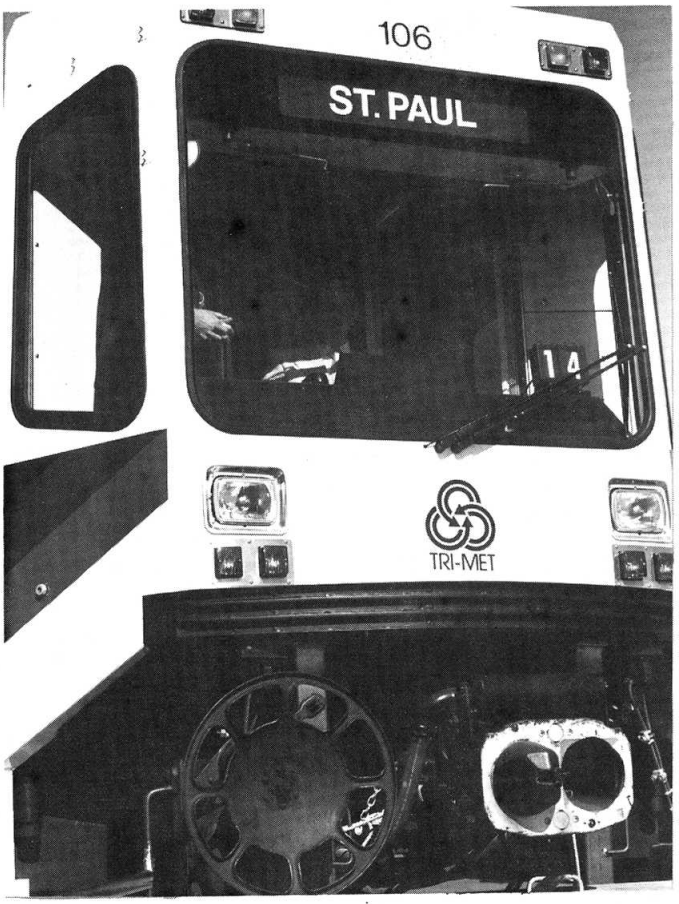
The destination sign at one end of the double-end LRV read **MINNEAPOLIS** while the sign on the other end read **ST. PAUL.** The signs in the middle of the car read **TWIN CITIES.** A portable electric generator provided power for the interior lighting and sounding of the LRV's bell and horn.

The display location provided the opportunity for the most people to easily get a chance to see and walk through the space-age vehicle, and over 2,000 people did just that. Many more saw the car but did not take the time to wait in line to walk through it.

The attendance on Sunday was boosted considerably when a "See the LRV" announcement was flashed on the scoreboard three times during the Vikings-Atlanta football game in the Metrodome. And the fans mobbed the LRV after the game as if they were expecting to ride it home.

The display was sponsored by the Hennepin County Regional Railroad Authority, one of the agencies involved in the LRT study, and Bombardier, Inc. MTM volunteer members **Ray Bensen Sr., Mike Buck, George Isaacs, Dave Norman, Ray Norton** and **Fred Rhodes** staffed the LRV exhibit to greet visitors and answer questions. The members were dressed in civilian attire for this non-MTM event. After all, this LRV is more akin to NASA than TCRT! Bombardier also had several representatives on hand.

Staff members passed out flyers which explained the concept of light rail and the LRV, some of which is reprinted here, and its possible use and routes in the Twin Cities as well as a full-color data sheet on the Bombardier LRV.



Although the destination sign on Bombardier's LRV No. 106 read "St. Paul," the car was built for the Tri-Met LRT system in Portland, Oregon. The sign at the other end read "Minneapolis" and the signs in the middle read "Twin Cities." Photo by Bill Graham.

While the Portland LRV was in town, MTM took some Bombardier, Inc. officials out to Lake Harriet and gave them a ride on MTM's 76-year-old streetcar 1300. They were very impressed with the car and our operation. It was quite a change of pace from their LRV and they got quite a kick out of the ride.

Portland's LRV's

Although the Portland LRV's have their roots in Canada, the last 70 percent or so of the production of the LRV's is performed at Bombardier's new assembly plant in Barre, Vermont. Portland has ordered 26 of the articulated LRV's, starting with No. 101, for its line. It has received some cars already although startup of service is nearly two years away. The car on display was No. 106.

The Portland car is similar to an order completed for Rio de Janiero. It comprises two articulated units totaling 89 feet in length and weighing 92,000 pounds. It can carry around 200 passengers, seated and standing, and can be operated in trains of up to four cars. Only the two outboard trucks are powered, each using a single traction motor to drive either axle.

The center truck is not powered since the articulated joint doesn't allow space for a traction motor. Rubber chevron springs support the truck center bolster, and rubber springs inside the frame provide additional cushioning. The car loads from street level unlike the Calgary and Edmonton cars which use high-level platforms.

The operator's controls are simple. A "joy stick" controls both power and brakes. The reverser lever, mounted to the left of the joy stick, looks much like those on MTM's Lake Harriet streetcars. The other controls operate doors, lights, warning and public address systems. Like any proper streetcar, Portland's cars mount an electric warning gong on either end.

The car uses dynamic brakes to slow, and hydraulic disc brakes to complete each stop. An electro-magnetic track brake is available for emergency stops and for holding during loading. There is no air compressor aboard the car. The "tire" of each wheel is isolated from the wheel center by hard rubber inserts to reduce noise.

The top speed of the car is 55 mph and it can accelerate at nearly twice the rate of a diesel bus. Translated to University Av. in the Twin Cities, the car could cut end-to-end travel time by 15 to 20 minutes, depending on the spacing of the stops.

It is not accidental that these features remind one of our lamented PCC cars that still are alive and well in other cities. The trucks are designed and built by BN of Belgium, earlier known as La Bruggeaux. In the 1950s, the firm began building cars which used many PCC features, including the Clark Equipment Company truck. Many of these cars are still in service in cities of northwestern Europe.

The Portland LRV's are configured for 76 passengers. Seats face both directions and are not reversible. All are cross seats except for four single longitudinal seats near the doors. Four cross seats closest to the doors fold up to allow for wheelchairs. There are no wheelchair lifts on the car, however. The Portland stations will have lifts that extend out to the LRV's floors. The LRV's can be equipped with air conditioning, but Portland's weather did not dictate that their cars be so equipped.

The LRV's are double-ended which eliminates the need for wyes or loops at the end of the line. All that is needed on a double-track line is a crossover track. On the inside of the display car, the two articulated sections were numbered "106a" and "106b."

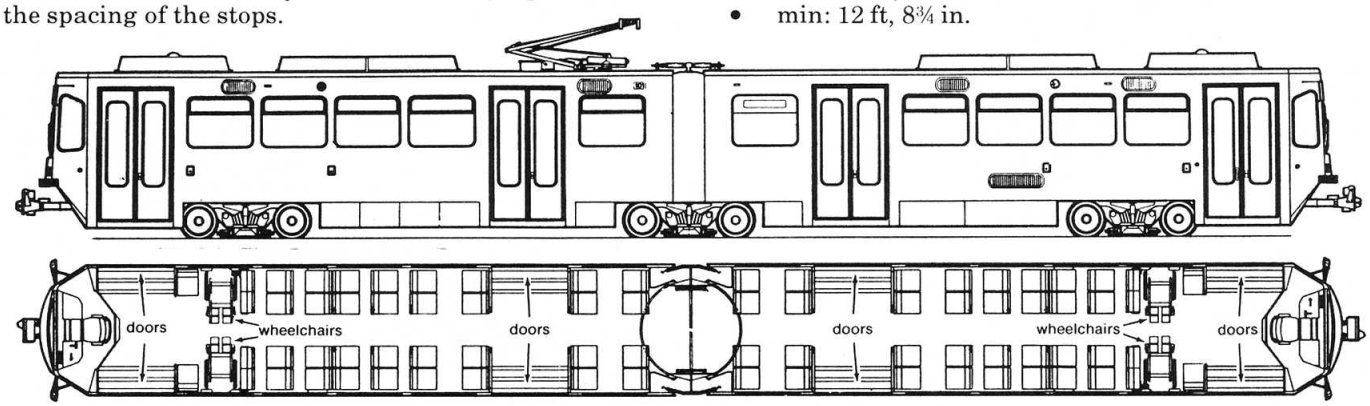
Bombardier is receiving orders mainly for the articulated (also referred to as 6-axle) cars rather than the standard single-body 4-axle cars. Officials say that large cities need the high-capacity 6-axle cars to make the LRT system work, especially when they are often linked in trains of two to four cars. All of Portland's cars will be 6-axle. It costs virtually no more to run a 6-axle LRV at nonpeak times than a 4-axle car.

What's a typical LRV like?

Bombardier's LRV's for Portland have the following specifications (rounded to the nearest ¼-in.).

Length: 89 ft, 1¾ in.
Width: 8 ft, 8¼ in.
Height: 11 ft, 1¾ in.
Weight: 92,150 lbs. (46 tons)
Trucks: 3 (2 motor; at ends)
Wheelbase: 6 ft, 2¾ in.
Wheel diameter
- new: 28 in.
- worn: 26 in.

Truck centers: 29 ft, 8 in.
Pantograph height
- max: 22 ft, 3 in.
- min: 12 ft, 8¾ in.



The side view and floor plan of Portland LRV car No. 106. The end trucks each have one 282 hp motor; the center truck has none. Four double doors per side permit quick loading and unloading of passengers. Full motorman's controls are at each end of the car.

Passengers
- seated: 76
- seated and standing: 211
- crush: 256

Line voltage: 750 VDC
Traction motor
- continuous rating: 261 hp
- one hour: 282 hp

Motors per truck: 1 (on 2 trucks)
Top speed: 55 mph
Doors: 4 double doors per side
Acceleration rate: 3 mph per sec.
Brakes: disk, spring applied, hydraulic release

Now that you know the specs of a 1980s LRV, what are the chances that you'll ride one in the Twin Cities someday? It depends on how well informed the decision makers are in the advantages of LRT.

Bombardier Inc. provided some comparisons between LRT andconventional bus service. The LRV's have proven to be outstanding performers in all critical areas including labor, fuel, length of service, speed, weather and popularity.

Labor

With labor accounting for 75 percent or more of the cost of operating transit systems, a large benefit of LRT is found here. While one bus driver can haul only about 75 passengers on a standard bus, one motorman operating a train of three LRV's can haul 600 or more passengers, eight times as many.

Length of service

LRV's will last at least twice as long as a standard bus. An articulated LRV will last about 30 years and cost $800,000. Some European streetcars have run 40 to 50 years. TCRT's home-built and excellently-maintained streetcars were still in good condition after nearly 50 years of service. An articulated bus will last about 15 years and cost about $300,000. After 15 years, new buses would have to be purchased and, at the current rate of inflation, could cost $1 million each by then for a total cost for both buses of $1.3 million.

Fuel

LRT systems are not dependent on fossil fuels. Electric power can be generated by hydro (such as by the Mississippi River in the Twin Cities), solar and nuclear energy or coal. Because of the instability of petroleum fuel supplies, the ability to generate power from alternative sources will become increasingly important. Also, LRT is inherently cleaner and quieter than bus systems, factors which are also becoming increasingly important.

Weather

Minnesota's numerous snowfalls, sleet storms and freezing rain bring all rubber-tired vehicles to a crawl, whether they have their own lane or not. LRV's are virtually unaffected by "greasy skid stuff" and zip along in any weather. In Boston's big blizzard of a few years ago, the only vehicles running were the streetcars!

Popularity

People prefer riding LRT to buses. The speed, comfort, cleanliness, low noise level and reliability of LRT is reflected by the "riding factors" of areas with or without LRT. In areas of equal population, rail transit ridership is much higher than bus ridership. People just like to ride LRT!

Speed

LRT systems can maintain much higher schedule speeds than buses. Edmonton's new LRT system averages 19 mph compared to the U.S. bus system average of 11.5 mph. Another advantage of LRT over buses is that they maintain a higher acceleration rate under load because of the ability to draw "unlimited" power from an overhead power source. Because the horsepower of an internal combustion engine is fixed, the more people a bus carries, the slower it goes.

What happens next?

Before we can step aboard that 6-axle coach at Nicollet Mall or on Wabasha Street, many more hurdles must be cleared. Some of the critical decisions in the months ahead will be based on reports issued by various committees.

- An environmental impact statement (EIS) is being prepared for the Southwest and University Av. corridors. The EIS will compare LRT ridership with busways and project the costs of operating each type of transit.
- The Steering Committee, made up of members from the Metro Council, RTB, MTC, MnDoT, U of M, Hennepin and Ramsey counties and the five cities in the corridors being studied, will hold a public hearing on the transit issue in November.
- By Jan. 1, 1985 the Steering Committee will name the option it prefers for the Southwest and University Av. corridors (the City of Minneapolis already has recommended LRT for the Hiawatha Av. corridor). The four options are: 1) LRT; 2) busway; 3) an improved bus system; and 4) do nothing. It will submit that recommendation to the RTB.
- The LRT Implementation Management Committee will issue a report on ways to finance and operate an LRT system and submit it to the RTB.
- By Feb. 1 the RTB will accept or reject the recommendations made by the two committees or make its own recommendations. If the choice is LRT or a busway, the RTB will decide which corridor gets it first.
- By March 1 the Metro Council will review the RTB report to ensure that it is complies with the Transportation Policy Plan.
- Design and construction. If the recommendation to build LRT on Hiawatha Av. is accepted and chosen to be the first line built, the schedule would be close to that announced last year; four years of detailed design work with a construction start of 1988 and a completion date of 1991. Some say the line could be operational before that date. Those dates probably would be typical of any other corridor selected instead.

Whether Twin Citians ever again enjoy the qualities of rail mass transit depends on the far-sightedness of our public officials. After years of studies and delays, maybe, just maybe, the time now has come for light rail transit—here at last?

S.F. PCC Cars May Represent All U.S. Lines

San Francisco, where streetcars never were abandoned, continues to make its streetcar system unique in the nation.

First, the city came up with a summer "trolley festival" in 1983 to help cover the absence of the fabled cable car system which was in the midst of a 20-month rehabilitation program. This involved borrowing vintage treetcars from various museums and running them in *revenue service* along with the new LRV's. The city also purchased vintage foreign streetcars from Australia, Vera Cruz, Mexico and Milan, Italy among others.

In addition, the city is negotiating the purchase of cars from Norway and Japan. Now in its second year of operation, the "trolley festival" appears to have become another popular permanent attraction in the bay area.

Second, when the city received LRV's a few years ago, it was to spell the end of the line for the aging PCC car fleet. Not so. The never-say-die PCC's are now being refurbished for a new life on the city's new Embarcadero tourist line to Fisherman's Wharf.

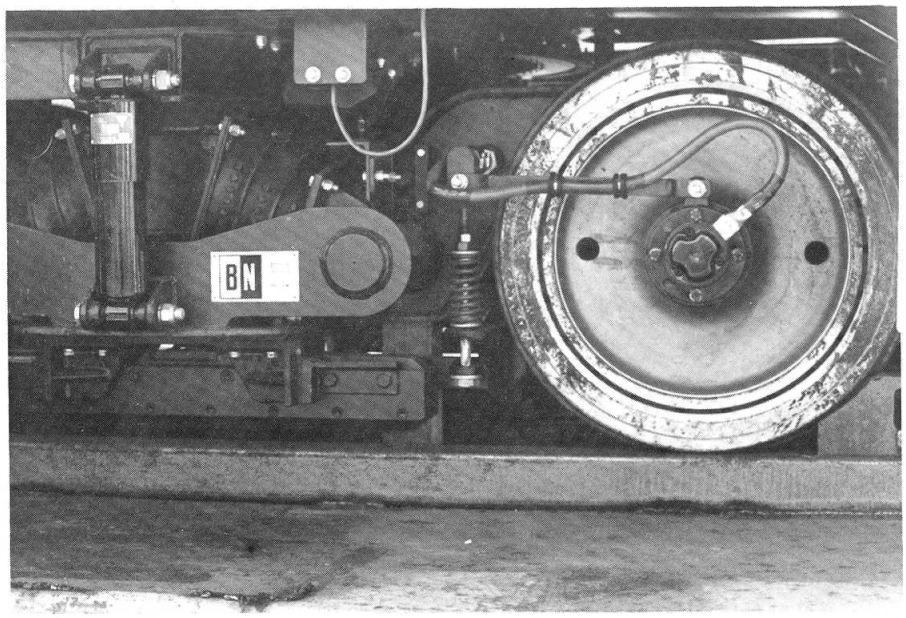
The new line is to have an International flavor or, at least, a National one. An idea being kicked around is to repaint each green and cream PCC car to represent a particular property where PCC cars once ran. Painting the cars would be less expensive than purchasing cars from all over the world.

The plan would be to paint the PCC cars to represent Boston, Pittsburgh, Cleveland, Shaker Heights, Philadelphia, **Minneapolis/St. Paul,** Toronto, Vancouver, Kansas City, Montreal, St. Louis, Newark, Chicago, San Diego, Birmingham, Baltimore, Los Angeles, Washington D.C., Detroit, Brooklyn, Cincinnati, Johnstown, Dallas, Pacific Electric, San Francisco and Illinois Terminal.

A combination of LRV's, foreign streetcars and individualized PCC cars in revenue service would certainly make streetcar watching in San Francisco unbeatable.

Portions of this article were written by Jim Holland of San Francisco for the May/June issue of *Trolley Fare*, a bi-monthly publication of the Arden Trolley Museum near Pittsburgh, Pa.

The control panel of Bombardier LRV No. 106. The acceleration and braking of the car is controlled by the large T-shaped "deadman" lever to the left of the panel. The lever is set at the "Max. Brake" position. The forward/neutral/reverse lever is at far left. The square buttons control all other functions of the car; heat, lights, bell, horn, doors, etc. The telephone receiver can be used to talk to the carhouse or to passengers over a P.A. system. A foot pedal lowers the electromagnetic track brake onto the rails. An identical control panel is at the other end of the double-ended LRV. The motorman's cab is completely enclosed, accessible by a small door inside the car. Photo by Bill Graham.



One of the LRV's power trucks. The trucks are made by BN (of Belgium) and feature elastomere isolation of the "tire" from wheel hub, ground return cable bolted to axle center, diagonal rubber chevron springs behind the shock absorber, and an electromagnetic track brake at the bottom. Photo by Bill Graham.

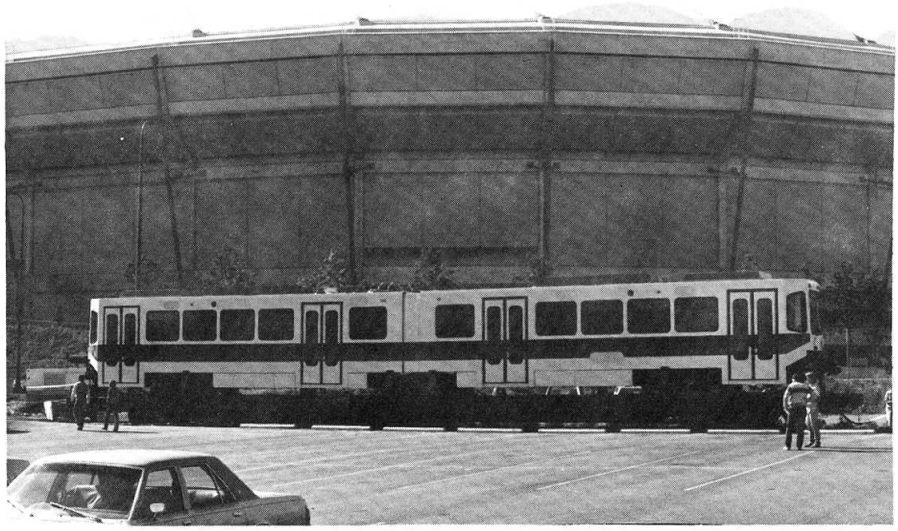
George Isaacs, left, and Mike Buck were among several MTM members who helped staff the LRV on Sept. 15 and 16. Photo by Ken Fletcher.

Large crowds waited in long lines to see the Bombardier LRV at 4th and Chicago in downtown Minneapolis on Sept. 16. Over 2,000 people walked through the 89-foot-long coach. Note "Twin Cities" on the destination sign. The retracted pantograph is at left, above "Twin Cities." Photo by Ken Fletcher.

TWIN CITY LINES

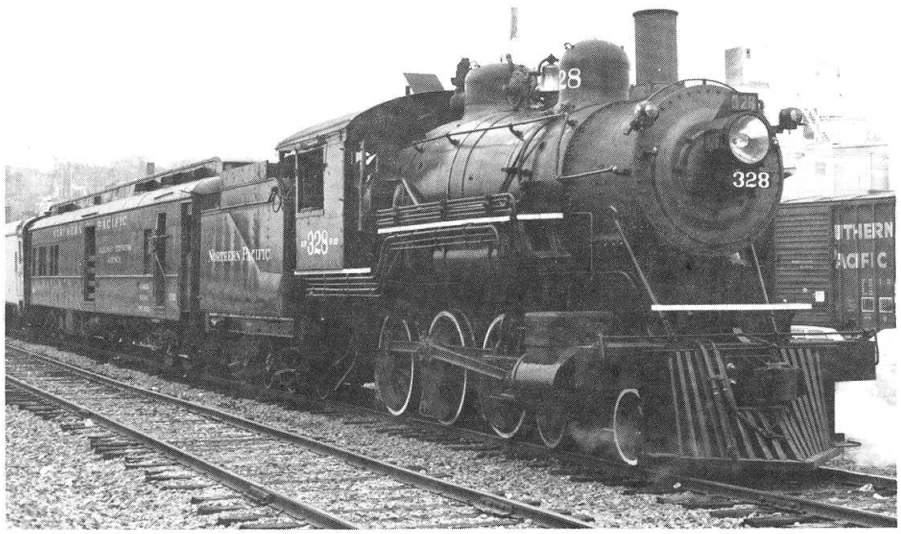
A 3-unit articulated train stopped at the Central Subway Station in downtown Edmonton to board Hennepin County officials and other passengers in August. Running the LRT in a subway through downtown Minneapolis has been suggested—at an extra cost of $100 million. Photo by Bill Graham.

An LRV train stopped at Clareview Station in Edmonton, Alberta, Canada on Aug. 13. Members of the Hennepin County Regional Railroad Authority and other county officials rode this system and a similar one in Calgary during a fact-finding tour last summer. The Edmonton and Calgary systems use platform loading of passengers similar to subway systems. The Portland LRT system will use the conventional street loading style. Photo by Bill Graham.



The LRV was parked in the shadow of the Metrodome at 4th and Chicago in downtown Minneapolis the weekend of Sept. 15 and 16, a likely station stop if LRT lines are built. Photo by Bill Graham.

The 328 steam train neared the old Prison switch as it left Stillwater for another passenger run on Oct. 14. Photo by Bill Graham.

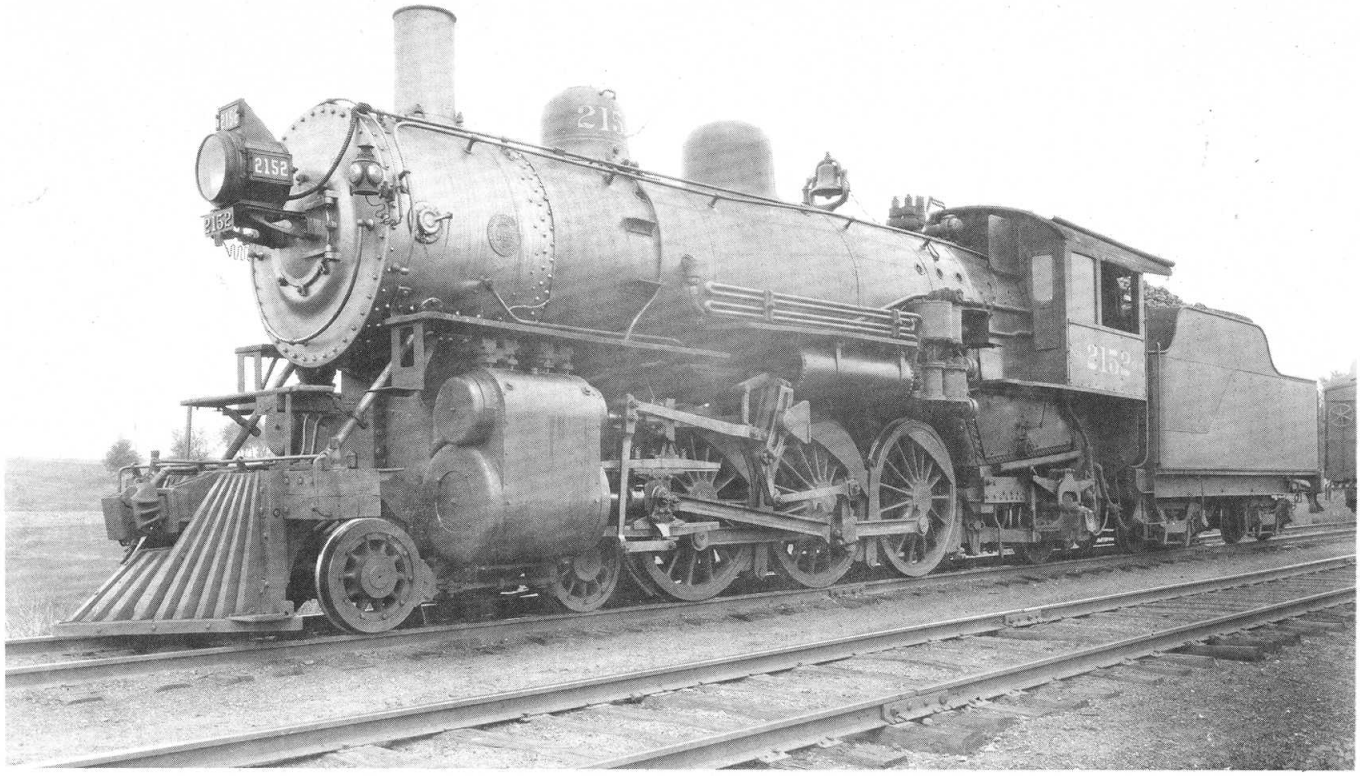


The NP 328 steam train waited at the station in Stillwater during passenger reloading on Oct. 14. Most trains were sold out, giving evidence that the museum's new permanent railroad site will be well patronized. Photo by Bill Graham.

Even the 328 steam train had to compete with street traffic on this downtown Stillwater street during Lumberjack Days on July 15. Photo by Loren Martin.

A catch! As the MTM 328 steam train carried its passengers along the museum's 6-mile railroad line in Stillwater on July 14, several catches of "mail" were made "on the fly" by MTM's Northern Pacific RPO car 1102. Photo by Elizabeth Burth.

Get out the shoe horn! Long lines of passengers waiting to board MTM's 328 steam train was a common sight in downtown Stillwater during Lumberjack Days on July 14 and 15. All trains were sold out well in advance and people sat 3 to a seat in many cases. Photo by Loren Martin.



As Northern Pacific's passenger traffic grew rapidly after the turn of the century, a fleet of over 200 4-6-2 Pacifics, in six different sub-classes, was developed. No. 2152, a light 69-in. driver engine of the Q-3 class built in 1909, served for over 40 years in mainline and branchline assignments and handled trains ranging from the North Coast Limited to local way freights. No. 2152 is a sister to MTM's NP 2156 now being restored in the Minnesota Transfer Railway Roundhouse in St. Paul. Photo courtesy of Ben Curry.

MTM Membership Application

The all-volunteer nonprofit Minnesota Transportation Museum was formed in 1962 for the purpose of finding, restoring and operating vintage rail equipment for the education and the enjoyment of the public as a reminder of days gone by. If you like what what you see in this magazine, how about becoming a member and helping us? It is a rich experience filled with fun and tradition. Join us today!

☐ MTM FAMILY membership ($20 per year). All members over 18 eligible to operate museum equipment.

☐ MTM ACTIVE membership ($15 per year). Eligible to operate museum equipment.

☐ MTM ASSOCIATE membership ($10 per year).

All members receive the bi-monthly **Minnegazette** magazines at their homes.

☐ I do not wish to join MTM, but would like to contribute to the restoration (tax deductible).

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August 2021

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